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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/394,138 09/10/99 MONTGOMERY D 16650004US02

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EXAMINER

SMITH HICKS, E

ART UNIT

PAPER NUMBER

1741

2

DATE MAILED: 12/10/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/394,138

Applicant(s)
Donald Montgomery

Examiner
Erica Smith-Hicks

Group Art Unit
1741



☒ Responsive to communication(s) filed on Sep 10, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-51 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-51 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Information Disclosure Statement

1. Applicant should admit of any prior art that he is aware of for proper consideration by this Office. Applicant's list of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. Applicant should submit a proper information disclosure statement by filing a PTO form-1492.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claim 10 is objected to under 37 CFR 1.75 as being a duplicate of claim 9.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

5. Claims 1-24, 27-33 and 36-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Heller et al. US 5,929,208.

Claim 1 is rejected because Heller et al. disclose a method for electrochemical placement of a material at a specific location on a substrate, which comprises the steps of : providing a substrate having at its surface at least one electrode that is proximate at least one molecule bearing at least on protected chemical functional group (col. 17, lines 7-11); applying a potential to said electrode sufficient to generate electrochemical reagents capable of deprotecting at least one of the protected functional groups of said molecule and bonding the deprotected chemical at col. 20 lines 25-48.

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Claims 2 and 18 are rejected because Heller et al. disclose the placing of a buffer solution in contact with the electrode at the surface of the substrate to prevent electrochemically generated reagents from leaving the locality of the electrode (col. 22, lines 25-37).

Claims 3 and 19 are rejected because Heller et al. disclose the use of a phosphate buffer at col. 22, line 41 of the reference.

Claims 4 and 20 are rejected as the prior art discloses that the buffering solution is present in a concentration of at least 0.01 mM at col. 22, line 40.

Claims 5 and 21 are also rejected as the prior art discloses that the buffering solution is present in a concentration range of 0.1 to 100 mM at col. 22, line 40.

Claim 6 is rejected as Heller discloses protected monomers or preformed molecules having protected chemical functional groups at non-bonding sites in col. 15, lines 48-58.

Claims 7 and 22 are rejected because the prior art reference further discloses amino acid as the monomer in col. 21, line 30. (also see col. 6, lines 24-41)

Claims 8 and 37 are rejected as Heller et al. employ pre-formed molecules selected from the group consisting of proteins, nucleic acids, polysaccharides and porphyrins (col. 17, lns. 1-7). (also see col. 6, lines 24-41)

Claims 9 (duplicate claim 10) and 23 are rejected because the reference discloses the use of linker molecules or monomers in col. 21, lines 10-16.

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Claims 11 and 24 are rejected as the molecule of Heller et al. is directly attached to the surface of said substrate, via a linker molecule or attached to a layer of material overlaying said substrate in col. 14, lines 56-67.

Claims 12 and 27 are rejected because Heller et al. teach the protection of the chemical functional groups with an acid or base labile protecting group at col.

Claims 13, 14, 29-31 and 40 are rejected as Heller et al. teach the use of an array of electrodes in col. 4, lines 44-54

Claim 15 is rejected as the combinatorial synthesis method of Heller et al. discloses sequentially deprotecting other protected chemical functional group of the monomer or pre-formed molecule and bonding another monomer or pre-formed molecule to the deprotected monomer in col. 15, lines 48-58.

Claim 16 is rejected as the method of Heller et al. further includes bonding a second monomer and repeating the selective deprotection of a chemical functional group in col. 20, lines 25-49.

Claim 17 is rejected as the reference discloses selective deprotection by the application of potential to one or more electrodes sufficient to generate electrochemical reagents at the selected electrodes

Claim 28 is rejected as the substrate used in the prior art may be a semiconductor, plastic, glass or ceramic substrate in col. 10 lines 5-8.

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Claim 32 is rejected as the microcapillary electrode tubes of Heller et al. have diameters in the range of 1-100 μ (col. 22, lines 28-30).

Claim 33 is rejected as Heller et al. teach the use of platinum electrodes (col. 14, lines 34-36).

Claims 36 and 38 are rejected as the Heller et al. method teaches additional bonding steps wherein pre-formed molecules are bonded to deprotected chemical functional groups, said pre-formed molecule bearing at least one protected chemical functional group in claims 6 and 8 of the reference.

Claim 39 is rejected as the electrode pads of Heller et al. are packaged with a switch box for selective activation (col. 25, lines 1-3).

Double Patenting

6. Claims 1 and 2, 3-5 and 16-51 of this application conflict with claims 1, 15-47, and 49-50 of Application No. 09/003075. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

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Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Southern US 5,667,667 who teaches a method for electrochemically patterning a surface comprising electrochemical modification of a substance on the surface of an adjacent electrode; Kallury et al. US 5,405,766 disclose a non-electrochemical method for preparing immobilized enzymes through the synthesis of appropriately functionalized phospholipids and binding said chemical functional groups of bioactive substances; Baldeschwieler et al. US 5,824,470 who teach a platinum scanning probe functionalized with an electroactive reagent (col. 11, lines 1-58); Joran US 5,364,851 who teaches a method for producing conformationally restricted biologically active peptides; Meade et al. US 5,952,172 who teach nucleic acid mediated electron transfer and Bednarski et al. US 5,510,481 who disclose a method for fabricating molecular film using functionalized monomers.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica Smith-Hicks whose telephone number is (703) 305-7645. The examiner can normally be reached on Monday-Thursday from 8:30 a.m. to 6:00 p.m. and on alternate Fridays from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathryn Gorgos, can be reached on (703) 308-3328. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7718 and for After Final faxes it is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Kathryn Gorgos
Supervisor
Patent Office

ESH

December 6, 1999